Linguistics/Anthropology 301/501 - Fall 2011

Phonetics

T/Th 10:50-12:05 in HUM 119

Instructor: Dr. Kevin B. McGowan
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208 Herring Hall

Office Hours: Tuesday 3:00 - 5:00pm
or by appointment

Course Description

Humans have the uncanny ability to convert thoughts into vibrating air molecules, perceive minute patterns of vibration happening around their heads, and translate those vibrations back into thoughts! Nothing any science fiction author could ever write about mind reading could be as amazing, intricate, or subtle as speech. This course introduces students to the study of speech production and perception and the nature of the acoustic signal that is transmitted from speaker to listener. The course goals are:

1. To understand fundamental principles of phonetic theory and phonetic representation. We will study current theories of the complex tasks accomplished by speakers and listeners and will arrive at a representation of speech sounds in terms of their articulatory (speaker-based), acoustic, and perceptual (listener-based) characteristics.

2. To introduce students to phonetic experimentation and analysis. Small-scale experiments will provide training in physiologic measurement, acoustic analysis and perceptual testing. We will reinforce theoretical principles by performing empirical tests of claims.

3. To consider articulatory, acoustic and perceptual properties as imposing a set of simultaneous constraints on the notion of "possible speech sound" and as contributing to the definition of "possible speech sound system" for human languages. This consideration serves as a bridge from phonetics to future coursework many students will take in phonology.

4. To provide practical experience in producing and transcribing sounds of the world's languages.

Departmental Prerequisite: Linguistics/Anthropology 200

Required Textbooks

A Course in Phonetics (6th edition) by Peter Ladefoged ISBN: 1428231269
Acoustic and Auditory Phonetics (3rd edition) by Keith Johnson ISBN: 1405194669
Additional required readings will be on our OwlSpace site.

Excellent, but not required, resources for all students of linguistic phonetics:
Raphael, L., Borden, G., Harris, K. 2007. *Speech Science Primer.* 5^{th} edition. Lippincott Williams & Wilkins.
Ladefoged, P. & Maddieson, I. 1996. *The Sounds of the Worlds Languages.* Blackwell.

The required textbooks are available through online retailers and may well be at the Rice University Bookstore soon. Discussions will parallel the readings but will not always cover the same material. You are responsible for all material covered in readings and in class. Regular class attendance and active participation are essential for mastery of the material and will be reflected by your overall course

grade. Slides, when used, will be made available online, but serve only as an outline for the discussion we'll have together in class. If you have to miss class, please arrange to borrow notes from a friend (please note that this may require making a new friend).

Practice Transcription Assignments
Over the course of the semester there will be four (4) practice transcription assignments. These are ungraded but compulsory. Please, I beg you, do all of these.

There will be a final transcription exam, worth 20% of your final grade, held on December 1^{st} (the last day of class). In this exam you will be presented with a variety of audio and video recordings which you will transcribe phonetically.

There will be a required set of homework assignments on phonetic transcription. For these assignments, you will download a set of questions and, in many cases, an audio or video file from OwlSpace. You will complete the assignment, then download an answer key. You will grade yourself on the assignment (I encourage you to work with a partner on this part), then turn the graded assignment in via OwlSpace. **You will not receive credit for these assignments per se; however, your final transcription exam will be weighted by the number of transcription assignments completed. That is, if you only complete 3 of the 4 assignments, then your final transcription exam grade will be multiplied by .75! If you do *none* of the transcription assignments then the highest grade you can receive on the transcription exam is a zero (0) (because** $0xX = 0$**)**. OwlSpace will be used to track your number of completed transcription assignments. They will be posted on OwlSpace one week before their due date – this will happen at approximately equal intervals throughout the semester. No late assignments will be accepted.

Transcription is a skill that can only be learned through practice. Moreover, it is essential that you contemplate your errors and understand why you are making them. What do you tend to mishear? Why might this be the case?

Students learning phonetic transcription tend to fall into one of two groups: those who learn transcription quickly and those who learn it slowly but ultimately master it. Grading should reward you for ultimately attaining the skill without penalizing you for your personal learning curve. The current scheme puts the onus on you to take responsibility for engaging in timely transcription practice. It rewards participation in the process rather than individual differences in learning curve.

Course Requirements (301, undergraduate students)

1. **Homework Assignments** 40%
   Four homework assignments will each be worth 10% of your grade: HW 1 (production 1) due 9-8, HW 2 (production 2) due 9-22, HW 3 (hearing and perception 1) due 11-8, and HW 4 (perception 2) due 11-22.

2. **In-class transcription exam** 20%
   This grade will be weighted by the number of practice transcription assignments you complete (see above!). The in-class exam will consist of audio and video recordings of native speakers producing both English and non-English speech sounds.

3. **Exams:** 40%
   An in-class acoustics exam and a take-home final exam are each worth 20% of your final grade. The final exam will be comprehensive.

Course Requirements (501, graduate students only)

1. **Homework Assignments** 40%
   Four homework assignments will each be worth 10% of your grade: HW 1 (production 1) due 9-8, HW 2 (production 2) due 9-22, HW 3 (hearing and perception 1) due 11-8, and HW 4 (perception 2) due 11-22.

2. **In-class transcription exam** 20%
   This grade will be weighted by the number of practice transcription assignments you complete (see above!). The in-class exam will consist of audio and video recordings of native speakers producing both English and non-English speech sounds.

3. **Exams:** 20%
   An in-class acoustics exam and a take-home final exam are each worth 10% of your final grade. The final exam will be comprehensive.

4. **Term project/paper** 20%

   A final paper in which you perform and write up either an independent phonetic analysis or a perception experiment is worth 20% of your final grade. Projects should capitalize on the skills used in homework assignments, e.g. measuring voice onset time or vowel formants for one or two speakers. You **must** write-up and present a project prospectus to me by 11-22. Final papers are due

5. **Additional readings**

   As the semester progresses, I will occasionally post foundational phonetics articles on OwlSpace for graduate students to read. These papers will also be discussed in the weekly phonetics brown bag lunches (more later!). You should refer to these articles when completing homework assignments and, as appropriate, in your final paper and prospectus.

Homework Information
Homework sheets will be available for download from OwlSpace at least 1 week before their due date.

Completed homeworks are to be uploaded to the course website; hardcopy assignments will not be accepted. Note that completed assignments should be submitted in plain text or PDF format **only**. I will not accept Word files.

Late Homework Policy These are not going to be the kind of homework assignments you can leave until the last second. Phonetics is exacting and can be both difficult to think through and labor intensive. Late homework will not be accepted without an approved excuse for, for example, illness or family emergency. Alternate due dates can be arranged *in advance* of the regular deadline if you have legitimate reasons for the request, such as sports schedules. Please consult with me during my office hours.

If you fail to meet a due date: upload your homework as soon as possible. The system will allow the upload, but your file will be flagged as late. I will not grade homework marked as late unless you submit, and I approve, a signed, paper-based written request to have your late paper graded, including a brief description of why you think the submission deadline should be extended in your case. You can hand your signed, written request directly to me or leave it in my departmental mailbox in Herring Hall.

Honor Policy

Appropriating someone elses work and portraying it as your own is cheating. Collaborating with someone and portraying that work as solely your own is cheating. Obtaining answers to homework assignments or exams from previous semesters is cheating. Falsifying data or experimental results is cheating. (The foregoing is not intended to be a complete list. A complete description of Rices Honor Code, plagiarism, and other general information can be found at the Rice Honor Council Web page at http://honor.rice.edu/). If you are caught cheating, you will be referred to the Honor Council. If you are unsure about whether a specific action is cheating, you may check with your TA or the intstructor. Some general guidelines are:

- Do not look at notes, assignments, or exams from previous semesters.
- Do not seek solutions to homework problems or exams from outside sources, including books (other than the textbook) or the internet.
- Do not copy other (current or former) students homework assignments. To minimize this temptation, always type up your homework answers by yourself, separately from your study group or other students in the class.
- Once you have started to work on your acoustics or final exam, do not discuss it with other students, until after you have turned it in and the exam time is over.
- Do not falsify data or other results in your homeworks or Extra Credit project.
- Cite all sources used and cite and designate all quotations as such.

Study Groups

I encourage students to form study groups to talk about readings and lectures, and especially to discuss and work through analyzing homework problems. Invite me if you want and I'll try to come.

However, after you figure/argue them out together please type up your homework answers alone, separately from the other study group members. It is usually easy to tell who has worked together and we will not grade identical answers gently.

Americans with Disabilities Act
If any student in the class has a documented disability needing academic adjustments or accommodations, please get in touch with me during the first two weeks of class. All discussions will remain confidential. Students with disabilities will also need to contact Disability Support Services in the Ley Student Center. I look forward to working with you to make this class enjoyable and accessible for all.

Course Schedule

AAP = Johnson's Acoustic & Auditory Phonetics, 3rd ed [in brackets: page numbers for 2nd edition]
CIP = Ladefoged & Johnson's A Course in Phonetics, 6th ed [in brackets: page numbers for 5th edition]
Items in (parentheses) are due on the day indicated. Readings should be completed prior to the first day they are listed.

Tuesday	Thursday
Aug 23rd **1** Introduction: Overview and Contract	25th **2** Production: Initiation (CIP ch. 6, pp. 136-147 [133-143])
30th **3** Production: Phonation (CIP ch. 6, pp. 148-157 [143-152])	Sep 1st **4** LAB: Stop Closure Duration and VOT
6th **5** Production: Consonantal Articulations (CIP ch. 1 & 2)	8th **6** Production: Consonantal Articulations (CIP ch. 3, **HW 1**)
13th **7** Production: Consonantal Articulations (CIP ch. 7)	15th **8** Production: Vowels (CIP ch. 4)
20th **9** Production: Vowels (CIP ch. 9, pp. 217-222 [211-216] & 228-232 [223-227])	22nd **10** Production: Vowels, **HW 2**
27th **11** Transcription Practice and Discussion	29th **12** Production: Hierarchical organization (CIP Ch 5, pp. 107-113 [107-111] & 118-127 [116-124]; Ch 10 pp. 243-250 [237-244])

Tuesday	Thursday
Oct 4th **13** Basic Acoustics (AAP Ch1; Ch2 pp 25-28 [Ch 1; Ch 5 pp. 79-82], transcription 1 due)	6th **14** Acoustic phonetics: Acoustics of the vocal tract (AAP Ch 2 [Ch 5, omit 97-100])
11th	13th **15** Acoustic Phonetics: Vowel spectra (AAP ch. 6 [ch. 6])
18th **16** Acoustic phonetics: Digital signal processing (AAP Ch3 [Ch 2; Ch 5 pp. 97-100])	20th **17** Acoustic phonetics: Digital signal processing
25th **18** *Kevin sick, no class*	27th **19** Acoustic phonetics: Acoustics of obstruents (AAP, Chs 7-8 [Ch 7-8])
Nov 1st **20** Acoustic phonetics: Acoustics of sonorants and more (AAP Ch 9 [Ch 9]) (transcription 2 due Monday)	3rd **21** Acoustics Exam (in class)
8th **22** Basic audition and psychoacoustics (AAP Ch 4 [Ch 3])	10th **23** The Task of Perception (AAP Ch 5 [Ch 4])
15th **24** Vowel Perception (Ladefoged & Broadbent 1957)	17th **25** Perceptual Experimentation (Diehl et al. 2004, pp. 149 - 155, **HW 3**)
22nd **26** Categorical Perception, **transcription 3 due**	24th
29th **27** Phonetics/Phonology Interface	Dec 1st **28** Static Palatography (**Transcription Exam (online)**, **HW 4**)